STAT

[redacted]

Ref: 552-OD-191

18 May 1964

STAT [redacted]

Project 552
Progress Report, April 1964

Gentlemen:

Enclosed are three (3) copies of [redacted] Progress Report on Project 552 for the period April 1964. STAT

Very truly yours,

STAT [redacted]

President

ARB/de
Encl: (3) P.R. (4 pp)

Declass Review by NIMA/DOD

PROGRESS REPORT

For

VERSATILE, HIGH PRECISION STEREO

POINT TRANSFER DEVICE

Period Covered: April 1964

Dated: 18 May 1964

Job No.: 552

Document No.: OD-189

#552 - OD-189

PROGRESS REPORT
For
VERSATILE, HIGH PRECISION STEREO
POINT TRANSFER DEVICE

This report covers the progress and work performed on subject Point Transfer Device for the month of April 1964.

GENERAL

Engineering and design is approximately 90% complete with exception of work on vacuum film holddown, high intensity light source and electronic control consoles. These areas have passed preliminary design stage and will be completed during the next reporting period.

Manufactured parts are approximately 80% complete. Many subassemblies were completed.

OBJECTIVE ASSEMBLY

Overall assembly was made and is now in correction stage. Low power illumination problem has been solved by placing a field lens between film and objective lens. Design for this added lens should be complete during next reporting period. Tentative design approaches appear to cause no limitation on scanning travel although there are several clearance problems yet to be solved.

#552 - OD-189

EYEPIECE ASSEMBLY

Assembly not complete, but all subassemblies have been checked for operation. Articulated eyepiece configuration has been dropped because space limitations permitted only cantilever mirror and eyelens support. Supporting members will be considered to prevent damage to fiber cables due to eyepiece angular adjustments.

SUPERSTRUCTURE AND EYEPIECE SUPPORT

Because articulated joint is not to be used, eyepiece is now to be supported with dual four-bar linkages. This arrangement keeps eyelenses approximately in same place during angular adjustment. Superstructure design using Radial Saw elements remains unchanged except to adapt four-bar scheme above.

BASE FRAME, CARRIAGE AND DRIVE MOTORS

Frame and carriage assembly is nearly complete, except awaiting improved two speed transmissions in stepping motor drive. To improve motor starting, achievement of desired stepping rate and lowering of peak torque values several torsional dampers schemes have been investigated and tried with success. Final damper configuration is being designed and should be complete during next reporting period.

#552 - OD-189

VACUUM PLATENS AND MANIFOLDS

Vendor supplying platen is now refining his manufacturing methods so that desired groove depth and low visibility are maintained. The method of measurement of microgroove depth seems to have been a problem because we repeatedly observed shallower grooves than did vendor. Efforts are still being continued to get ten (10) second pull down time for all film widths used. Manifold design is progressing favorably with attempts to arrange a transparent member over film, possibly clear vinyl that is very soft, to easily conform to film's irregular contour before pull down. Design will provide convenient film loading, and manifold servicing.

HIGH INTENSITY LIGHT SOURCE

Light table castings have been cleared away and general illuminating sources modified to make room for high intensity light source. Loop forming slot had to be substantially reduced to make room for light source. Design and detailing, however, of the source housing will be complete next month.

MAIN CONSOLE AND CONTROL CONSOLE

After customer's representatives examined control cabinet and instrument mark-up an electrical control configuration was set up with control cabinet set up with long axis perpendicular to main console. A preliminary layout of electrical controls was forwarded to customer for evaluation and approval. Layout of auxiliary and control cabinets will be complete next month.

#552 - OD-189

ELECTRICAL SCHEMATICS, WIRING DIAGRAMS

Schematics complete except for last minute changes. Wiring diagrams are 50% complete with wiring to be started soon. Electrical purchased goods are being checked for shortages so that wiring can proceed without delay.

JOY STICK

Dual mechanism coupling is being designed and will be complete next month. Knob and digital display for joy stick rotation appear to be accommodated best near its related mechanism, possibly at 10 o'clock position with respect to each axis of rotation. Knob configuration discussed several months ago, where they were grouped to left of joy stick, introduces a long path between control and controlled mechanism. Use of chains or timing belts required special sprockets to be made. Many idlers would be required if gears were used. To aid visibility of readout, display may be tilted about 30 degrees from horizontal.

Work to be Completed During Next Reporting Period

1. Complete all design and detail work.
2. Complete all possible subassemblies.
3. Start wiring of system.
4. Check and test subassemblies as they are completed.